K2 Observations of Variable White Dwarfs in Fields 6 and 7

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We propose observations of known and suspected variable white dwarfs in Fields 6 and 7 of the K2 mission. We propose short-cadence observations of pulsating white dwarfs within the empirical ZZ Ceti instability strip, which will allow unprecedented insight into the interiors of these stellar remnants. Additionally, we propose long-cadence observations of white dwarfs to constrain magnetic activity, rotation rates, and possible stellar or even substellar companions to the endpoints of the vast majority of stars in our Galaxy.

The centerpiece of this proposal involves short-cadence observations of high-probability pulsating white dwarfs in Fields 6 and 7. We propose five SC targets in Field 6 that are high-probability DAVs, one of which is a known pulsating white dwarf, and propose two SC targets in Field 7. With typical white dwarf pulsation periods ranging from 100-1400 s, we require short-cadence data.

Additionally, we propose long-cadence observations of all color-selected white dwarfs in Fields 6 and 7 to continue our in-depth photometric study into rotation, magnetic activity and potential planetary or double-degenerate companions around white dwarfs.